

**REMARKS**

**Foreign Priority:**

Applicant thanks the Examiner for acknowledging Applicant's claim to foreign priority under 35 U.S.C. § 119(a)-(d), and for confirming that the certified copy of the priority document has been received at the Patent Office.

**Drawings:**

Applicant thanks the Examiner for indicating that the drawings filed with the application have been accepted.

**Information Disclosure Statement:**

Applicant also thanks the Examiner for the initialed and returned Form PTO/SB/08 A & B filed on November 25, 2003, thus indicating that all of the references listed thereon have been considered.

**Claim Objections:**

The Examiner has objected to claims 3-8 because the Examiner asserts that the language in these claims is awkward. Applicant has amended these claims as shown in the previous section, and submits that these claims are now clear. Applicant hereby requests the Examiner withdraw the above objection to the claims.

**Claim Rejections:**

Claims 1-8 are all of the claims pending in the present application and currently all of the claims stand rejected.

***35 U.S.C. § 102(b) Rejection - Claims 1-8:***

Claims 1-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,049,761 to Hoshino et al. With regard to this rejection, we have the following comments.

As an initial matter, Applicant notes that the Hoshino reference, cited by the Examiner corresponds to Japanese Publication No. JP 5-280988 (one of the priority documents for the Hoshino '761 patent is the application for the JP '988 reference) which is discussed in pages 1-2 of the present application. Thus, for at least the reasons set forth in the present application, Hoshino has little or no relevance to the present application. A copy of an English Abstract of JP '988 is attached for the Examiner's reference.

Further, Applicant notes that Hoshino discloses a vehicular traveling direction measuring system which uses geomagnetic measurements to determine the traveling direction of a vehicle. Specifically, the Hoshino system derives a weighting constant to be factored into the directional data, where the weighting constant is based on monitored magnitudes of geomagnetic disturbances around a vehicle.

Specifically, in Hoshino a microcomputer 4 uses the frequency components of a sensor output (caused by magnetic disturbances) which differ from the sensor output due to the vehicle turning to determine a direction of the vehicle. To accomplish this the microcomputer derives a ratio based on distances between the center coordinate of a standard azimuth circle (in a standard turn) and the X and Y coordinate values. If the ratio magnitude is over 1 then it is determined that a deviation is being caused by a disturbance. *See* col. 3, line 46 to col. 4, line 20.

However, in the present invention, the display direction determining unit determines the current display direction based, in part, on "historical" information of the direction of the

AMENDMENT UNDER 37 C.F.R. §1.111  
Application Number 10/720,348

Our Ref: Q78468  
Art Unit: 2859

vehicle. This is not disclosed in Hoshino. Namely, Hoshino only takes into consideration a ratio between current measured values, and does not use any historical directional data in determining the current direction of the vehicle. Because of at least this difference, Hoshino fails to teach or suggest each and every feature of the claimed invention.

In view of the foregoing, Applicant submits that Hoshino fails to disclose each and every feature of the claimed invention. Thus, Hoshino fails to anticipate the claimed invention, as required under the provisions of 35 U.S.C. § 102(b). Accordingly, Applicant hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 102(b) rejection of claims 1-8.

**Conclusion:**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

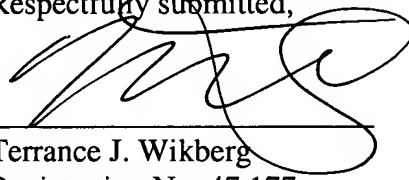
WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: October 18, 2004

Respectfully submitted,



Terrance J. Wikberg  
Registration No. 47,177

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 05-280988

(43)Date of publication of application : 29.10.1993

(51)Int.Cl.

G01C 17/30

G01C 17/38

(21)Application number : 04-327887

(71)Applicant : NIPPONDENSO CO LTD

(22)Date of filing : 08.12.1992

(72)Inventor : HOSHINO KENICHI  
KOBAYASHI SHINJI  
MIZUTANI HIROTO  
TERAOKA HIROKI

(30)Priority

Priority number : 04 19982

Priority date : 05.02.1992

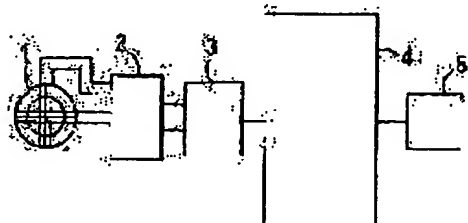
Priority country : JP

## (54) AZIMUTH DETECTING APPARATUS FOR VEHICLE

(57)Abstract:

PURPOSE: To obtain sensor-output mean-value data wherein the relaxation of an external-disturbance component and the follow-up property in a circling operation of a vehicle are ensured simultaneously by a method wherein a mean-value data formation means forms the sensor-output mean-value data according to weight which has been set.

CONSTITUTION: An azimuth detecting apparatus for vehicle use is constituted of a geomagnetism sensor 1, a signal processing circuit 2, an A/D converter 3 and a microcomputer 4. The X-output and the Y-output of the geomagnetism sensor 1 are connected, at each prescribed cycle, into digital signals suitable for being operated and processed by the microcomputer 4 by means of the A/D converter 2 via the signal processing circuit 2. The digital signals are input to the microcomputer 4; the microcomputer operates and processes them; azimuth data D is found. An azimuth display device 5 displays an azimuth. A mean-value formation means in the microcomputer 4 achieves that the weight of the geomagnetism-sensor output value up to a previous operation is set to be large when a detected external disturbance amount is large. On the other hand, it achieves that the weight of the geomagnetism-sensor output value in the present operation is set to be small when the detected external disturbance amount is small. Thereby, sensor-output mean-value data is formed. As a result, it is possible to obtain the sensor-output mean-value data wherein the relaxation of an external-disturbance component and the follow-up property in a circling operation of a vehicle can be ensured simultaneously.



## LEGAL STATUS

[Date of request for examination]

28.06.1999

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

3316889

[Date of registration]

14.06.2002

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]